

## PREVENTION OPPORTUNITIES UNDER THE BIG SKY

## THE MONTANA LEAD POISONING PREVENTION PROGRAM

Young children can be poisoned by lead from household paint and a variety of other sources. Children with elevated lead levels in their blood are at increased risk for learning and behavioral problems, reduced intelligence, and a plethora of other serious health effects. There is no safe level of lead in the blood. There is a national effort to eliminate childhood lead poisoning as a public health problem.<sup>1</sup> This issue of *Montana Public Health* describes the Montana Lead Poisoning Prevention Program and offers recommendations for blood lead testing of children, especially those at high-risk for lead poisoning.

**Reporting elevated blood lead levels required in Montana** Since 2000, a venous blood lead test result  $\geq 10$  microgram/dl in a person aged 13 years or less has been reportable (ARM 37:114.203). From 2001 through 2006 one hundred fifty-five cases in persons aged 0 to 16 were reported. Of these cases 92 were boys (average age 2.2 years), 58 were girls (average age 2.3 years) and sex was not recorded for 5 cases. The average blood lead level for these cases was 14.5mg/dl. (TABLE 1) Of the 118 cases for which the geographic origin of the blood test was recorded, 69% were submitted from Silver Bow (62), Lewis and Clark (12) and Flathead (7) counties, combined.

**Table 1. Blood lead levels (micrograms/dl) for cases reported in Montana, 2001-2006**

<u>Age (years)</u>	<u>Cases</u>	<u>Average test result (range)</u>
<1	15	14.3 (10-38)
1-4	120	14.6 (10-44)
5-9	3	12.5 (10-18)
10-16	2	17.0 (16-18)
Total	150	14.5 (10-44)

**The Montana Lead Poisoning Prevention Program** Lead poisoning is preventable. The Montana Lead Poisoning Prevention Program exists to assure prompt and thorough investigation of all reported cases of children with elevated blood lead levels. The Program also collaborates with local health departments and clinicians to increase public awareness of the persisting presence of lead in the environment, and the risks lead poses especially for children. Elevated venous blood lead levels in children 13 or younger should be reported promptly to the local health department.

**CDC Guidelines for childhood blood lead screening** The Centers for Disease Control and Prevention recommends screening all children at least once prior to 2 years of age, and any child 3 to 6 who has not been previously screened.<sup>1</sup> If capillary blood is used for an initial screening test and the lead level is  $\geq 10$  microgram/dl, a venous blood sample should be tested. If the result of the venous blood lead is elevated, the case should be reported, an investigation

conducted to identify the lead exposure that caused the elevated lead level, and subsequent venous blood tests done to assure that the child's blood lead level has decreased. (Table 2)

**Table 2. When to repeat venous blood lead testing for children with elevated blood lead findings**

<u>If initial blood lead (microgram/dl)</u>	<u>Perform follow-up test</u>
10-14	within 3 mo
15-19 (once)	within 2 mo
15-19 (more than once)	1-2 months until level <15
$\geq 20$	1-2 months until level <15

**Groups for which blood lead screening is required in Montana** Children enrolled in the Medicaid Early and Periodic Screening, Diagnosis and Treatment (EPSDT) Program should have a screening blood lead test prior to 12 months of age and again prior to 24 months of age. Medicaid enrolled children aged 36-72 months who have not been screened previously should also be screened. During the time period October 2005 through September 2006 less than 2% (191/11,156) of Montana Medicaid children aged 0-2 were screened.<sup>2</sup>

**Risks for childhood lead exposure** Despite decades of effort to decrease the risk of lead exposure in the U.S., lead remains a common environmental contaminant to which children (and others) can be exposed.<sup>3</sup> From 1976 to 2002 the proportion of U.S. children with a blood lead level  $\geq 10$  microgram/dl decreased from 88% to less than 2% largely because of policies that decreased the dispersal of lead in the environment (e.g., eliminate leaded gasoline; eliminate use of lead-based paint).<sup>4</sup> Among the persisting environmental risks, lead-based paint and lead-laden dust in older homes occupied by children less than 6 are by far the most wide spread. When a child has an elevated lead level, other risks to ascertain include: food, cosmetics, spices and traditional medicine that contain lead; imported lead-glazed pottery; exposures associated with occupations or hobbies; and lead contaminated soil and dust from yards contaminated by past industrial activities (including smelting or mining).

## Lead risk assessment

The Montana Lead Poisoning Prevention Program offers a variety of materials for clinicians to use to ascertain lead exposures as well as to educate parents/care-givers about risks for lead exposure.

These materials are designed to assist clinicians to obtain environmental and family occupational history in order to provide anticipatory guidance to parents of young children. The materials include:

- Patient environmental profile
- Elevated blood lead response checklist
- Blood lead levels in Montana children; a quick reference guide
- Blood lead screen request and consent (Figure)

**Figure. Example of material available from Montana Lead Poisoning Prevention Program**

MONTANA DEPARTMENT OF PUBLIC HEALTH AND HUMAN SERVICES LEAD POISONING PREVENTION PROGRAM Phone: (406)444-0695 Fax: (406) 444-1802 Blood Lead Screen Request and Consent Form	
Today's Date _____ Child's name _____ DOB _____ M ___ F ___ Race _____ ///(some sections of form not shown)///	
<b>RISK ASSESSMENT</b> Home: Rent ___ Own ___ Built Before 1950 ___ 1950-1978 ___ After 1978 ___ Remodeling? Y N Chipping Paint? Y N Vinyl mini blinds? Y N Repainting? Y N Family employment: Auto repair, construction or demolition, battery repair or recycling, smelting, welding, radiator repair, work on firing ranges Y N Family home: Imported food, medicine or cosmetics, toys, pottery, crystal, or jewelry Y N Family hobbies: Reloading bullets, casting sinkers, ceramics, stained glass, pottery Y N ///(remainder of form not shown)///	

Available at [www.lead.mt.gov](http://www.lead.mt.gov)

## Recommendations for Montana clinicians

REPORT children ≤13 with elevated venous blood lead levels ( $\geq 10$  microgram/dl)

ASCERTAIN risk information: potential lead exposures for the child; are other children potentially exposed?

REPEAT venous blood lead testing to assure that lead level decreases

PROVIDE education material to parents/caregivers [materials are available from Montana Lead Poisoning Prevention Program]

For more information, contact your local health department or Janet Stetzer, RS, CLS, Coordinator of the Montana Lead Poisoning Prevention Program, 406-444-0695, [jstetzer@mt.gov](mailto:jstetzer@mt.gov).

### References:

1. CDC. Screening young children for lead poisoning; guidance for state and local public health officials. Atlanta, GA: US Dept of Health and Human Services, CDC;1997.
2. DPHHS. Annual EPSDT participation report (Form HCFA-416), Helena, MT: DPHHS, 2006.
3. DeBuono BA. Milestones in public health [Chapter 3; Environmental health]. Pfizer Global Pharmaceuticals, Pfizer Inc, New York, NY, 2006.
4. National health and nutrition examination survey (NHANES) for selected years. See CDC. Interpreting and managing blood lead levels  $<10$  microgram/dl in children and reducing childhood exposures to lead: recommendations of CDC's Advisory Committee on Childhood Lead Poisoning Prevention. MMWR 2007;56(No. RR-8):1-16.

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